

1. Record Nr.	UNINA9910299661603321
Autore	Lupi Sergio
Titolo	Induction and Direct Resistance Heating : Theory and Numerical Modeling / / by Sergio Lupi, Michele Forzan, Aleksandr Aliferov
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-03479-0
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (381 p.)
Disciplina	620 621.042 658.26 670
Soggetti	Energy systems Manufactures Energy consumption Energy Systems Manufacturing, Machines, Tools, Processes Energy Efficiency
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Theoretical Background -- Electromagnetic field in workpieces with flat surfaces -- Electromagnetic field in cylindrical bodies -- Special problems in induction and resistance heating -- Analytical and numerical methods for calculation of induction and conduction heating systems.
Sommario/riassunto	This book offers broad, detailed coverage of theoretical developments in induction and direct resistance heating and presents new material on the solution of problems in the application of such heating. The physical basis of induction and conduction heating processes is explained, and electromagnetic phenomena in direct resistance and induction heating of flat workpieces and cylindrical bodies are examined in depth. The calculation of electrical and energetic characteristics of induction and conduction heating systems is then thoroughly reviewed. The final two chapters consider analytical

solutions and numerical modeling of problems in the application of induction and direct resistance heating, providing industrial engineers with the knowledge needed in order to use numerical tools in the modern design of installations. Other engineers, scientists, and technologists will find the book to be an invaluable reference that will assist in the efficient utilization of electrical energy.

---